

Patent Claims:

1. Method for controlling the pressure buildup in an electronically controllable brake system, preferably for use in motor vehicles, including a master brake cylinder, in particular a tandem master brake cylinder (TMC), a vacuum brake booster (booster), at least one additional pressure source for brake force assistance, preferably a hydraulic pump which is drivable by a controlling unit and the pressure of which can be applied to wheel brakes of the vehicle,  
c h a r a c t e r i z e d in that an approximation of a point where the auxiliary-force to actuating-force ratio (operating point) of the vacuum brake booster (booster) falls below a predetermined ratio is detected, that a pressure gradient in the master brake cylinder (TMC pressure gradient) is detected, and that in the event of a detected approximation of the operating point of the booster and when a pressure gradient limit value of the detected TMC pressure gradient is exceeded, the additional pressure source is activated for brake force assistance, for the purpose of building up additional brake pressure.
2. Method as claimed in claim 1,  
c h a r a c t e r i z e d in that the pressure gradient limit value is in a range from 150 bar/s to 250 bar/s, preferably 190 bar/s to 210 bar/s.
3. Method as claimed in claim 1 or 2,  
c h a r a c t e r i z e d in that the additional pressure source for brake force assistance is activated

when exceeding of the pressure gradient limit value is detected for a predetermined or established minimum period ranging from 10 ms to 100 ms, preferably from 20 ms to 40 ms.

4. Method as claimed in any one of claims 1 to 3, characterized in that when an approximation of the operating point of the booster is detected and the pressure gradient limit value of the established TMC pressure gradient is exceeded, a predetermined or calculated, preferably a calculated operating point of the booster will be lowered by a predetermined or established appropriate operating point reduction value, that means an operating point-reduction pressure value, and thus a corrected operating point is established which causes activation of the additional pressure source for the purpose of building up additional brake pressure.
5. Method as claimed in any one of claims 1 to 4, characterized in that pressure in the master brake cylinder (TMC pressure) is established and used as a control command representative of a driver specification for brake pressure control, and that the additional pump is activated for the purpose of building up additional brake pressure when the TMC pressure exceeds the operating point or a corrected operating point of the booster.
6. Method as claimed in claim 4 or 5, characterized in that the operating point of the booster for brake pressure control is considered as constant when, in the course of a continuous brake pressure increase, the operating point which is reduced by

the operating-point reduction value (corrected operating point) is reached, or is not reached.

7. Method as claimed in any one of claims 4 to 6, characterized in that the operating point of the booster is continuously calculated, and a detected change of the calculated operating point of the booster is likewise taken into account when establishing a predetermined or established appropriate operating-point reduction value.
8. Method as claimed in any one of claims 1 to 7, characterized in that the approximation of the operating point of the booster is established or estimated according to a stored calibrated booster characteristic curve.
9. Device for controlling pressure buildup in an electronically controllable brake system for preferably motor vehicles, including a master brake cylinder, a vacuum brake booster (booster), at least one additional pressure source having a pump which is drivable by a controlling unit and the pressure of which can be applied to wheel brakes of the vehicle, in particular for implementing the method as claimed in any one of claims 1 to 8, characterized in that the controlling unit includes a detecting and actuating unit for establishing an approximation of a point where a predetermined ratio between the auxiliary force and the actuating force (operating point) of the vacuum brake booster (booster) and of a pressure gradient in the master brake cylinder

(TMC pressure gradient) is not reached, and for activating the additional pressure source for the purpose of building up additional brake pressure when a predetermined or established pressure gradient limit value of the established TMC pressure gradient is exceeded in the event of a detected approximation of the operating point of the booster.

10. Hydraulic motor vehicle brake system equipped with an electronic control with a device as claimed in claim 9.